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FIREMEN

SIXTY-SECOND YEAR • NATIONAL FIRE PROTECTION ASSOCIATION

15

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What's the difference between EUREKA Multiple-Woven and plain "circular-woven"?

Most fire hose is "circular-woven", one ply at a time. Only Eureka furnishes *multiple-woven* hose.

Want to see the difference? Look at the cross-section of a Eureka multiple-woven hose. Notice those cords running up and down through the plies! You'll find them only in *multiple-woven* hose. The unique Eureka loom not only weaves all plies simultaneously but also weaves through them these additional warp threads that bind together the filler cords of *all* plies into a single homogeneous jacket. Result:

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- No space between plies to collect dirt and moisture,
- Longer, safer service life,
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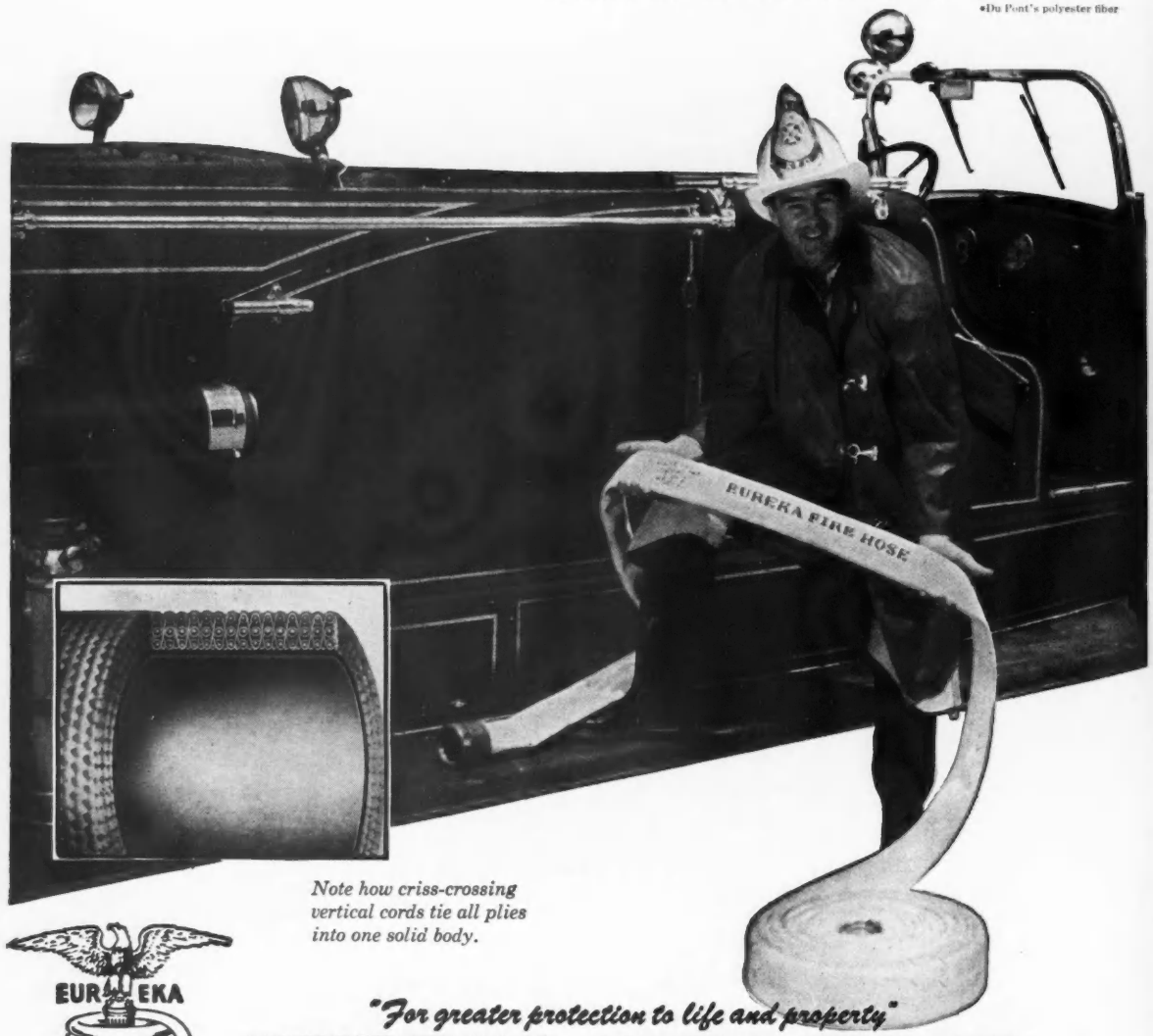
Built to withstand pressures of either 400 or 600 pounds, Eureka Multiple-Woven Hose—with filler (circular) cords of cotton or Dacron*—can be furnished in all standard diameters. Your Eureka representative will gladly give you all details. Remember, he is a fire hose specialist!

*Du Pont's polyester fiber



Note how criss-crossing vertical cords tie all plies into one solid body.

"For greater protection to life and property"

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Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

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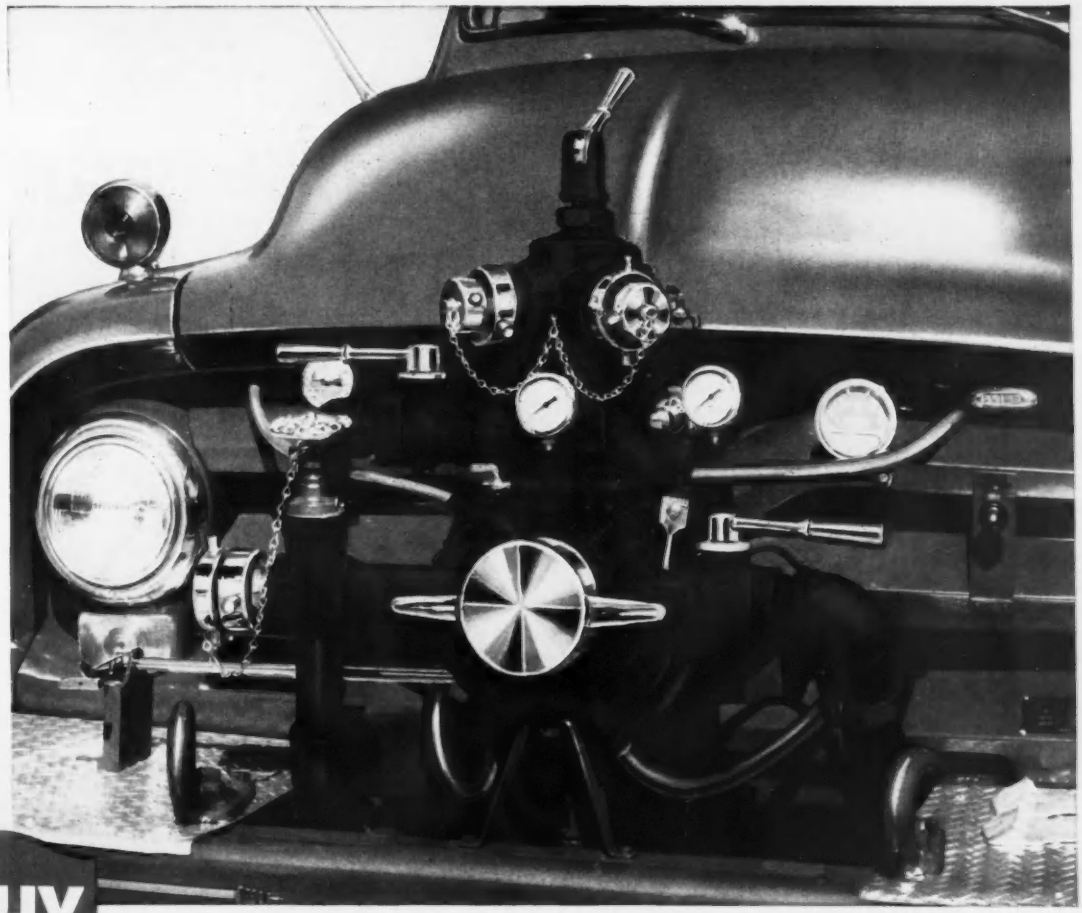

WHY

VOLUNTEER FIREFIGHTERS GET EXTRA ADVANTAGES WITH BARTON-AMERICAN FIRE PUMPS

For years, volunteers have voted enthusiastically for Barton-American Type UA Front-Mounted Fire Pumps . . . and installed them on thousands of trucks. The reason is simple. Type UA Pumps provide *extra* fire-fighting advantages with these outstanding features:

1. *Exclusive*, positive interlocking pump clutch has direct mechanical connection — can't slip at a fire.
2. Convenient, *direct controls* are located in front, on or near the pump. This speeds training of recruits, prevents confusion and makes operation fast and easy.
3. Front location and simple pump construction cut inspection and maintenance time *'way down* — a great help to busy volunteers.
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5. Front pump weighs less, uses no body space. You can *carry more water*, more equipment. It also improves weight distribution — gives truck better road-handling balance.
6. Pump is delivered complete with *factory-engineered* power take-off shaft, universal joints and pump gear ratios best for *your* truck's engine.
7. You can fight fires with *two or more* hose lines *while truck is moving*. Both volume and high pressure to 400 lbs. for effective fog streams.
8. Positive frost-proof priming with fast, trouble-free, *engine vacuum primer* of time-tested design.
9. With drive wheels on solid ground, you can "nose" down to pond or stream to draft water inaccessible to midship pumpers.
10. The UA Front Pump is *precision-built* of best materials — yet *costs less* to buy and install because it is simpler.

And there are other advantages — including our Service Pump Plan that helps keep your pumper *always ready* for use. Investigate the Barton-American Type UA now!

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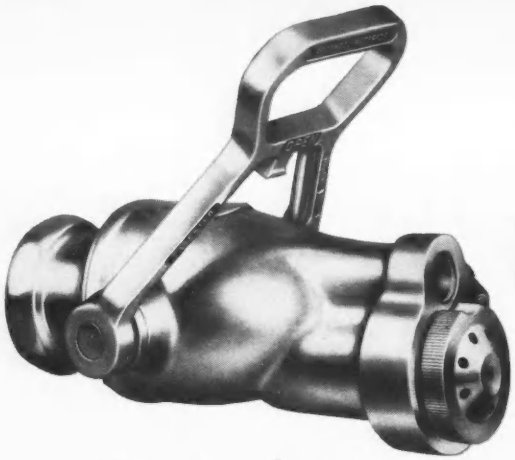
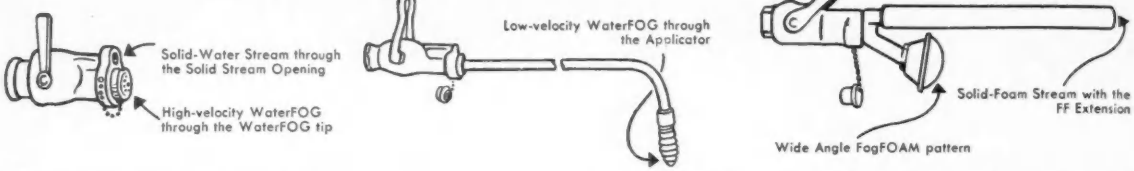
BATTLE CREEK, MICHIGAN, U. S. A.



Rockwood SG-60 WaterFOG Nozzle is five nozzles in one

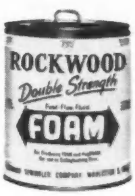
The lightweight Rockwood SG-60 WaterFOG Nozzle *eliminates "special" or single-purpose nozzles!* It actually does the work of five nozzles to put out fires faster, safer and more economically.

Here's what we mean . . .

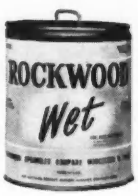

Solid-Water Stream through the Solid Stream Opening
High-velocity WaterFOG through the WaterFOG tip
Low-velocity WaterFOG through the Applicator
Solid-Foam Stream with the FF Extension
Wide Angle FogFOAM pattern

Here's what you need to put out ordinary combustibles and flammable liquids . . .

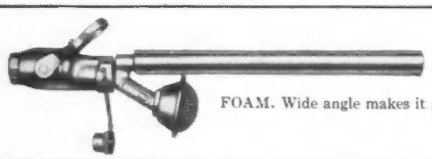
FOAM and "Wet" Eductor with the new FW Metering-Check Valve. Introduces Rockwood FOAM or "Wet" into hose lines, automatically proportioning correct amount of FOAM and "Wet" to water. Also usable wherever one liquid is fed into another on a fixed percentage basis.



Rockwood Double Strength FOAM. Puts out fires in flammable liquids, and in ordinary combustibles, quicker, at lower cost. Three parts FOAM and 97 parts water create a heat-resistant blanket.



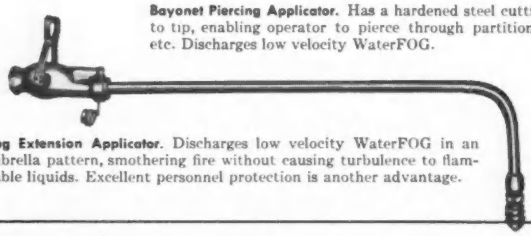
Rockwood WET. One part WET mixed with 99 parts water increases water's penetration and extinguishing action. Gives quickest results against deep seated fires. Saves time, water, manpower.



FF Extension Unit. Shown with Type SG-60 Nozzle. Discharges Rockwood FOAM in a solid stream or as Fog-FOAM. Wide angle makes it possible to cover large areas at one time.

and here's the way to get more information

Bayonet Piercing Applicator. Has a hardened steel cutting tool attached to tip, enabling operator to pierce through partitions, into interiors, etc. Discharges low velocity WaterFOG.



Long Extension Applicator. Discharges low velocity WaterFOG in an umbrella pattern, smothering fire without causing turbulence to flammable liquids. Excellent personnel protection is another advantage.

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Back Bay welcomes new MACK 1250's

Shooting high into the Boston sky, the curtain of water shown above signifies the Boston Fire Department's acceptance of three specially designed 1250 Mack triple combination pumpers.

Scheduled for service in Charlestown, East Boston and South Boston, these new pumpers will provide first-line protection for extremely challenging territory: a highly industrialized area that includes numerous reminders of Boston's historic past in the many narrow streets, steep hills and old—even ancient—buildings.

Based on long experience with Mack equipment, Boston authorities have no doubts whatsoever about the ability of the new pumpers to cope with everything that Boston terrain and New England weather can throw at them.

That's because no piece of Mack fire apparatus leaves the plant until Mack is certain that it is the finest equipment of its kind that over 50 years of experience and skill can build. Mack maintains this unmatched quality by building more of its vital components than any other maker. Contact your Mack representative today for *all* the facts on Mack's complete line of fire apparatus. Mack Fire Apparatus, Plainfield, New Jersey. In Canada: Mack Trucks of Canada, Ltd.

MACK
first name for
FIRE APPARATUS

Here's the last word in fire apparatus, designed and built by Mack to the specifications of the Boston Fire Department. The three new combination pumpers are powered by heavy-duty Mack engines, developing 262 hp at 2600 rpm. Extra-wide hose compartments hold 1000 feet of 1½" hose, 1600 feet of 2½" hose and 800 feet of 3" hose. There are lighted equipment compartments for tools and appliances and a 400-gallon flat-bed type booster tank.

5184

COMPLETE LINE OF PUMPERS — 500 TO 1250 GPM . . . SQUAD AND HOSE WAGONS . . . AERIALS — 65' TO 100' . . . COMBINATION LADDER TRUCKS

Metcalf UNIFORM FABRICS

BY WANSKUCK MILLS

CERTIFIED BY THE

UNITED STATES TESTING CO.

FOR COLOR FASTNESS · UNIFORMITY OF SHADE
ABRASION RESISTANCE · THREAD COUNT

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Firemen

Volume 24 — Number 6

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PAUL R. LYONS — ASSOCIATE EDITOR
HENRY S. GERE — ADVERTISING MANAGER

Published monthly for the fire service members of the
NATIONAL FIRE PROTECTION ASSOCIATION

A VOLUNTARY NON-PROFIT ORGANIZATION
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Cover Photo

Chief Thomas J. Maloney of Jersey City, New Jersey reports that his department handled this tough general merchandise warehouse fire on April 16th. There was no watchman, sprinklers or alarm systems in the building and the fire apparently burned for several hours before discovery. It started in the storage area on the first floor of the 5-story brick wood-frame building. High piled stock, locked windows, poor housekeeping, open stairs and shafts were factors which lead to heavy involvement of the structure. Response included 18 pumpers, 5 ladder trucks and a rescue wagon. Fire fighters used 15,000 ft. of 2½-in. hose and 1,350 ft. of 1½-in. hose. Total estimated loss was in the vicinity of $573,000. (*Photo by B. J. Stevens.*)

Morale

Every so often we are likely to encounter a fire fighter who is loudly bemoaning the "zero state of morale" in his particular department. Often this is embarrassing to the majority who realize that, while every man is entitled to his opinion, all members benefit or suffer in accordance with the impression that the individual makes with the public.

Generally, the man bemoaning the morale is an unfortunate publicly testifying to his own low morale; to the fact that he is personally a failure who cannot keep up with the times; who is living in the past in "the good old days" but who has been left behind through his own lack of self-discipline while his companions of earlier days are climbing the ladder of success. His line almost invariably is: "I was a great fire fighter back when . . ."

Such persons are always able to point to the fact that pay and working conditions lag behind the mounting cost of living, because this is true in most communities in these times of inflation. And it has always been true that no fire fighter can ever be paid his true worth because the skill, loyalty and devotion of the true fire fighter is beyond the ability of his community to give adequate expression of appreciation. It is service "beyond the call of duty" that has made the fire service great and admired.

The worst of this disgruntled minority is that its representatives have the knack of sounding off at the wrong time and to people who should be courted as friends of the department rather than antagonized. An even worse offense is to try to bring matters of concern inside the department before the public eye and into partisan politics. The fire department is the protector and servant of all the people and the man who is not willing to accept that role is a discredit to the uniform and to his fellow fire fighters.

The good fire officer is one who is just and equitable. He seeks to keep the "dirty linen" out of the public view. He understands that the fire fighter, by the nature of his job, is the friend of every man, woman and child, and that these people will respond to this genuine affection. One of the biggest arguments against police-fire integration is that the symbol of the fire fighter has ever been the man with the child in his arms, and not a night stick or service revolver in his hand. The disgruntled agitator may not understand this but the true fireman knows how to "make friends and influence people" for good.

Goal for April 30, 1958 —
20,000 NFPA members!
Will you help? **(See page 28)**

There's a Need for a Nozzle!

By Warren Y. Kimball, Manager, NFPA Fire Services Department

HOW long shall it be before the larger fog streams become truly operational in the average fire department? We see fire after fire where the flames dance merrily, thumbing their noses, as it were, at solid streams pointed against them.

In many cases it is clear to the observer that the solid stream is a "friend of the fire," bringing in vast quantities of oxygen and covering so little of the fire area at one time as to have an almost negligible extinguishing effect. As one fire chief described this recently, "The water from the solid streams ran down the stairs cooler than it came in, showing no heat absorption."

The fire service is doing an outstanding job with 1½-inch fog lines in absorbing heat rapidly with a minimum of water damage. But the minute a fire becomes a "big line job," all too many departments revert to the solid stream tip and perhaps prolong the fight needlessly.

One fire comes to mind when four big lines with 1⅛-inch solid tips were playing through second floor windows of a woodworking plant for some minutes without appreciable results. The flames continued to grow, fanned by the draft from the streams. Then the chief, seeing that he was not getting results, climbed a ladder to an adjoining roof where he could better survey the effect of the streams. He called for a 1½-inch fog line and in three minutes the fire was blacked out.

On another recent fire we watched a 2½-inch line with solid tip, operated in a window from a ladder for at least a half hour, with no appreciable effect upon the fire within a few feet of the nozzle except to keep the flames well supplied with air. Although barraged with heavy solid streams from all angles, this fire continued until the roof and most other combustible materials were burned away. In this case, the fire fighters had the same results as they would have had fifty years ago using steam fire engines and open nozzles. The fire was confined to the building.

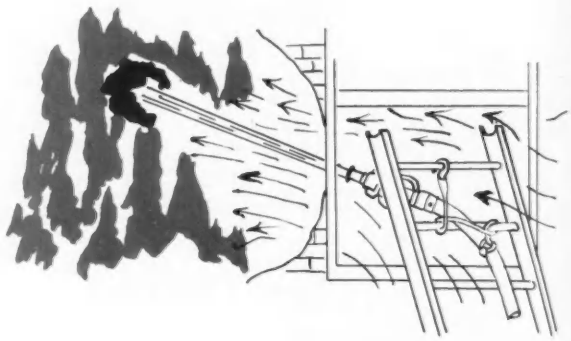


Figure A. Solid stream hits only a small area. Air current follows direction of stream through window.

Now to our way of thinking, the failure to make fog streams operational on the larger fires does not entirely rest with the fire departments and their traditional use of solid streams. We know of no fog nozzles for 2½-in. and larger streams that satisfactorily combine the desired features of reach, flow, and stream pattern. Many fog nozzles, while made for attachment to big lines, produce flows far too small for big fires. Many have a very small range of fog jet, either because they are preset for a wide angle fog, or because they only give their full flow in a very wide fog pattern. The flows from straight streams from the various fog nozzles for 2½-in. hand lines are notoriously poor and seldom exceed flows from 1-in. tips.

What is needed is a combination fog nozzle for 2½-in. lines that will give the 250 gpm flow equivalent of the standard 1⅛-in. tip both when operated at straight stream and at 30 degree fog. This flow should not require excessive pressure at the nozzle, thus making the line difficult to handle.

There are many instances at serious fires when it is necessary to use good streams from hand lines and it is impossible to direct heavy streams properly. These hand line streams must be capable of passing through normal window openings from a distance of say 30 ft. This means that a wide angle of fog cannot be employed. It should be possible to use a combination fog nozzle which will get the water through the window in divided form ready to absorb heat and in sufficient quantity to be effective. Reach of stream must compare favorably with that of a solid stream of the same capacity.

Even on wagon pipes and other heavy stream devices, present fog nozzles are often at a disadvantage because they lack sufficient range to be effective for large fires. Their best application seems to be from ladder pipes which can be brought into close proximity of the heat of the fire. For some years the fire

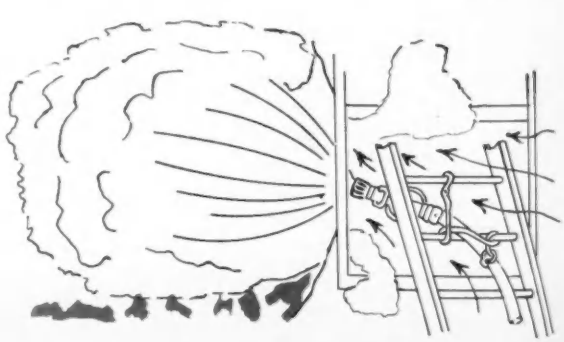


Figure B. Water spray and steam generation suppress the flame and limit effect of entrained air.

service has been talking about 30 degree fog as being the optimum for best extinguishment of Class A fires. However, in all too many cases, a 30 degree or wider pattern will not reach the fire or pass the water through the building openings. Therefore, the fog nozzle should be capable of giving an effective spray stream at a 10 to 15 degree pattern. The nozzle should be "all-purpose" so that it will be the regular weapon of the fire fighter when the fire is beyond the capacity of 100 gpm streams.

Now let us look at what happens when we play a solid stream from a 2½-in. line or heavy stream device into a fire. This is best shown in Figure A. We hit only a small part of the fire and the burning fuel at any one time. We are bringing in vast amounts of air to speed the combustion. We must stop thinking of the old idea of getting the water through a 10-in. circle. That is archaic and is against our interests. We should be thinking about effective quantities of spray at the desired reach and the ability to get this spray through a 30-in. opening.

Now it is true that the spray or fog stream also entrains air and brings oxygen to the fire, but this air is largely mixed with the water. The water blankets a much larger area than the solid stream and also converts into smothering steam quickly so that the oxygen has much less effect (Figure B).

One of the fallacies that has held back the use of fog on the larger fires is that "you need a very hot fire to take advantage of the fog." It is true that steam conversion will be more rapid in a hot fire, but if a fire is sufficiently hot that big lines are needed, there is plenty of heat to make the fog application more than worth-while. It is actually necessary or desirable because even twenty solid streams applied simultaneously may not cover enough fire area to stop the chemical reaction we call fire. Only spray or fog in adequate quantities can do this. But do not expect a fog nozzle with a short-range jet and discharging between 100 to 175 gpm of fog (as do most 2½-in. fog nozzles for hand lines) to give you the best results.

We are going to continue to burn down our cities until we are able to get the proper type of streams in quantities commensurate with the hazard. This problem requires cooperation of the fire service and the nozzle manufacturers. More attention to fundamental requirements for cooling and extinguishing fires should lead to design of an effective fog pipe for 2½-in. lines that will bring effective results in fire attack.

Rural Fires Demand Teamwork

BASICALLY, fireground operations in rural areas include the same problems as in large municipalities. The fire can be of tremendous proportions; it can destroy or threaten human life and it can create an urgent need for the response and coordination of a number of fire companies, thereby posing the problems of command and maximum utilization of equipment that arise so frequently in more populated areas.

Biggest problems for rural fire departments are water supply and mobilization of manpower at the fireground. Limited sources of water call for good teamwork in filling tank trucks and bringing them to the scene, or using portable pumps or suction boosters to take advantage of hardly accessible water holes. At the same time there is the problem of summoning volunteer fire fighters, frequently over long distances, to man available apparatus and equipment and get the maximum in fire attack.

A typical well-handled rural fire recently was reported to NFPA by Chief Robert P. King of the Bel Air Volunteer Fire Company, Bel Air, Maryland. About 10:28 P.M., a truck driver discovered fire burning in the rear of a barn in nearby Forest Hills. He awakened the owner, then telephoned an alarm to the Bel Air Fire Company. Before first responding apparatus arrived, the fire had spread rapidly through hay and straw in the rear of the barn and involved another building.

Bel Air's first truck arrived within eight minutes of the alarm. Meanwhile mutual aid assistance was called from volunteer fire companies in Jarrettsville, Delta-Cardiff and Darlington. Within ten minutes of the original alarm, six pumpers or tank trucks were at the scene, two more coming in a little later. Altogether, 70 fire fighters participated in the attack. All water had to be hauled by booster tanks or tank trucks from a source at least 1½ miles distant.

Despite the good start of the fire, the volunteers were able to evacuate and save 57 of 59 head of prized Holstein cattle from the basement of a cow barn and at the same time protect a number of closely exposed buildings on the farm property. Three barns and three silos, all of wood construction, were destroyed or damaged, with loss held to an estimated $45,000. (*Photo credit — "The Aegis," Bel Air, Md.*)

Odessa's Unique Fire Training

BECAUSE serious fires may occur in the oil and gas well properties under its protection, the Odessa, Texas, Fire Department has established a new Research and Development Center for training fire fighters in these special problems. The Department, headed by Chief Charles Meadows, protects municipal and industrial properties in the vicinity of the Permian Basin, near Odessa.

Since 1949, oil companies drilling wells have used hydraulic fracturing to get the oil products out of the ground. Fracturing is a process of injecting a sand and oil mixture under pressure into an oil deposit deep in the earth, thus separating crude oil from the heavier elements of the deposit, so that it may be pumped to the surface. The sand and oil are passed through a blender which is equipped with centrifugal pumps and a proportioner. This machine adds the desired amount of sand to each gallon of oil.

Blender pumps produce up to 70 barrels per minute and the danger of fire is greatly intensified when a hose bursts and "live" oil contacts on ignition source. According to Chief Meadows, several fatalities and several millions of dollars worth of fire loss have resulted because of inadequate fire fighting facilities and lack of training in fire fighting techniques.

To provide the proper training, the Fire Research and Development Center was developed by the Department in cooperation with a number of oil and gas producing companies.

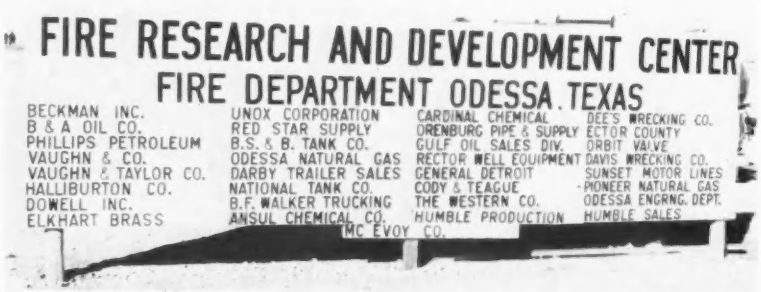
A typical "frac" fire started in pipe line valves of the Odessa Research and Development Center.

Typical training was conducted at the training center recently during an intensive five-day program. Fire fighters and service company personnel had opportunity to take part in practical combat of fires involving natural gas and flammable liquids under a variety of fire conditions. The following methods of extinguishment were used: plain water fog (low pressure), wet water fog (low pressure), dry chemical, foam — powder and liquid, fog foam, high pressure fog, small hand extinguishers, applicators and aerated wet water.

The well-planned training center, sketched on the opposite page, should be of interest to many members of the fire service. There are seven "problems," each of which is handled in a number of fire attack tests. For example, Problem No. 1 features a "Christmas Tree" into which natural gas is supplied through a 2½-in. pipe under 100 to 160 pounds of pressure. The gas escapes through loose flanges and open ends and is allowed to "pre-burn" for approximately 45 seconds; then the trainees begin their fire attack. Altogether, six methods of extinguishment were used on this particular problem. First attack was with two 1½-in. lines with fog nozzles operated at 80 pounds nozzle pressure. Next attack was with a 150-pound dry chemical extinguisher. Third method of attack was with 2½-in. fog nozzles at 80 pounds nozzle pressure. The next fire called for application of dry chemical from a 1500-pound extinguisher with the rate of application being 7½ pounds per second. The fifth method of attack was with two high pressure nozzles, applying a wetting agent at 65 gpm. Final attack was made with two high pressure nozzles and a 1½-in. fog nozzle, all applying wetting agents at the combined rate of 145 gpm. Accurate measurements were made of the time required to control each fire.

Thus, as the fires vary in size and complexity, fire fighters learn the application and limitations of various fire fighting methods and facilities for various kinds of fire. They also learn how groups of fire fighters are organized in combating large scale fires as a team.

A description of other training problems is at right. Training at the Center is conducted under the direction of Chief Meadows and E. W. Parker, Training Officer in charge of the Odessa Fire Department. Additional training advice was given by representatives of the cooperating oil, chemical and service companies.



Signboard posted at the Center lists the participating oil, chemical and gas companies and other cooperating organizations who have contributed to the program.

Problem 1. — See story at left.

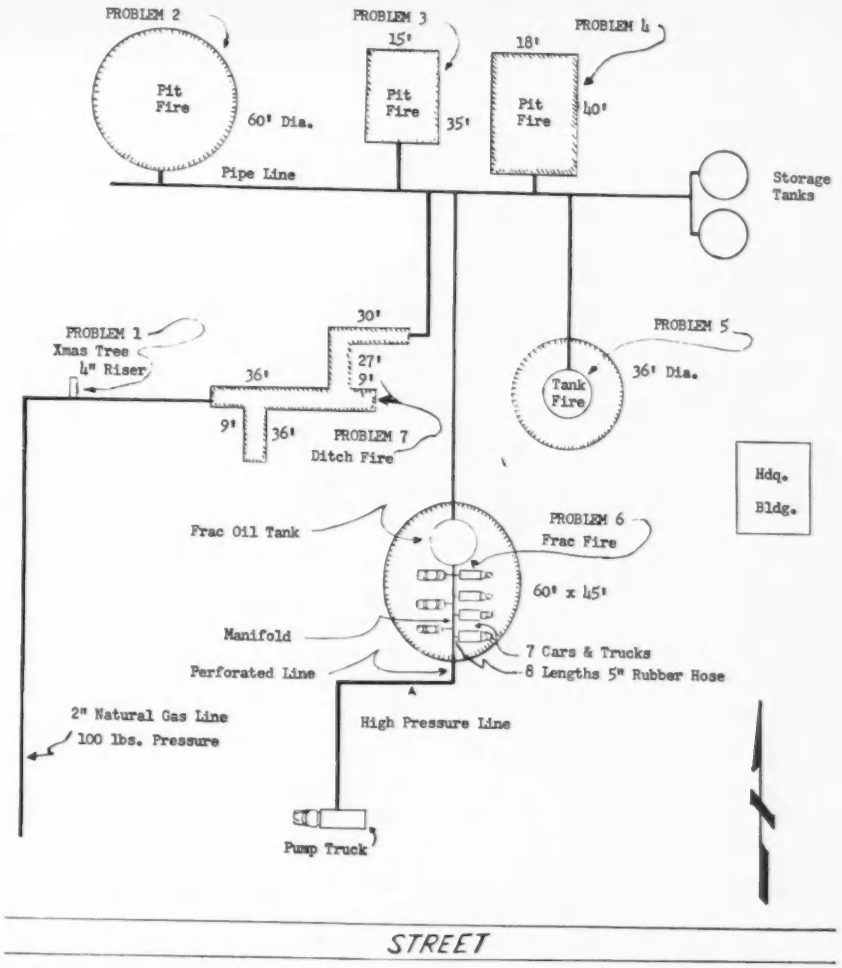
Problem 2. — This circular pit, 75 feet in diameter, contains 9,000 gallons crude oil with "no water cushion." Test fires are allowed to pre-burn for 60 seconds.

Problem 3. — This consists of a series of fires in a 15 by 35 ft. pit using good, live crude oil. Pre-burn is 45 seconds.

Problem 4. — Pit fires are created in an 18 by 40 ft. pit with 1600 gallons of live crude oil. Pre-burn is 45 seconds.

Problem 5. — This is a 500 barrel tank in a 36 ft. diameter pit with oil spilling from the tank. Pre-burn is one minute.

Problem 6. — A typical "fracture" is created in an oval pit 60 ft. in length and 45 ft. in width. Usually six or seven old automobiles and a 100 barrel fracture oil tank is involved. A 2-in. pipe with 10 perforations runs through the cars at the center of the pit. A "rupture" is created, allowing 144 gpm to escape under 150 pounds pressure. The oil is sprayed on the cars and the tank, with the pressure supplied by a pump truck located at a safe distance. Two types of tests are conducted: stopping pressures from the pump truck as soon as the fire begins, then allowing 30 seconds pre-burn. In the second test, the oil is pumped continuously and a 60 second pre-burn is allowed.



Problem 7. — This is an irregularly shaped ditch, approximately 66 ft. in overall length. Fire is created with natural gas escaping from a 2-in. pipe under 160 pounds pressure.

(Left) Top picture shows fire fighters moving in on tank fire of Problem 5. Bottom picture at left shows their progress using fog nozzles and a wetting agent.

(Below) Beginning of attack on Problem 6 involving fracture oil, autos and trucks.

Command Officers' Conference Program

Philadelphia Fire Department Initiates New Program to Develop Supervisory "Know-How" for Command Officers

FOR a number of years, advertising agencies and other business organizations have relied upon "brain-storming" and certain other types of group conferences as a means of solving problems. Through such meetings, attempts are made to "pick the brains" of top personnel to develop new ideas, new techniques and new approaches to everyday business problems. Favorable results have frequently been reported in business publications.

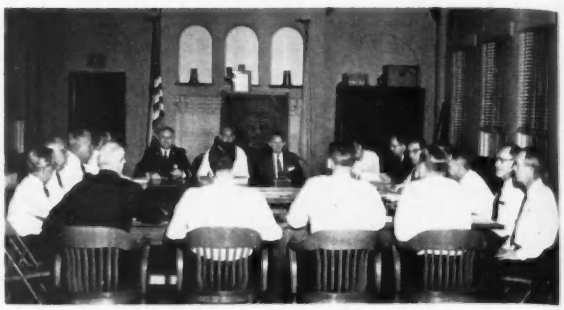
Recently, the Philadelphia, Pa., Fire Department initiated a similar program for its command officer personnel. Under the direction of Fire Commissioner Frank L. McNamee and Chief of Department George E. Hink, a 13-session, two-week course was developed. Cooperation for the program was obtained from the Institute of Local and State Government at the University of Pennsylvania. Conference leadership and guidance is given by a consulting professor of the University and a graduate student assigned to the fire department for a field work project.

Principal objective of the conference system is to get ideas and information from top officers of the department. The group studies and discusses a particular problem, then develops conclusions. In the conference, each officer is encouraged to speak his thoughts freely. "Positive ideas" are wanted and debate is discouraged. No matter how strange or unacceptable any idea may seem, it is treated sympathetically. Rank is not considered during the session since it is important that all participating officers realize that their principal obligation is to think and take active part in the conference.

According to a memo issued by the Department, basic purposes of such conferences are: to inform, to obtain suggestions, to permit group participation and to solve problems. Commissioner McNamee and Deputy Commissioner Hink feel that it is important for command officers to compare and discuss their supervisory experience and problems; to learn the latest techniques of supervision being developed throughout the country and to analyze major supervisory problems of the Department. Eventually, all officers in the Department who serve in a supervisory capacity, will participate in the program.

A command officer is in charge of each training group session. He maintains a record of attendance; convenes the conference and gives the introductory remarks on topics to be discussed; leads discussion (if he happens to be leader for the day); introduces special or guest consultants; assigns a member of the conference to serve as recorder for each session; and closes each session and distributes material for the next meeting.

The discussion leader of the meeting usually opens by presenting the basic facts and principles of the problem for 15 or 20 minutes. The group then approaches the subject, examining or analyzing it as it affects the Department. The members use prepared discussion questions, case situations, the remarks of the discussion leader, and personal experience as a basis for their ideas and discussion.



One of the conference sessions of the Philadelphia Fire Department. Deputy Commissioner and Chief of Department Hink is seated in front of the flag; Commissioner McNamee is second from his left.

Each topic is considered in two sessions. The second session is based entirely upon questions submitted by conference members to the Secretary of an advisory Steering Committee. The committee consists of the Commissioner, Deputy Commissioner Hink and other top personnel of the department, in addition to consulting personnel.

Some of the topics covered in the two sessions are: "Position and Relationships of the Battalion Chief"; "Standardization of Procedures"; "Analyzing and Dealing with Behavior"; "Training Responsibility of the Command Officer" and "Public Relations: Fire Prevention."

Typical questions used to stimulate discussion are listed below:

Trace the "chain of Command" from the Mayor to the Firemen. Are there any dangers that a Lieutenant might have more than one person giving him orders? How about other persons in the Department?

Why is the Fire Department organized as it is? Should the administrative unit be separate from other units?

Why is the Fire Marshal separate? Should Prevention be organizationally separate from Fire Fighting?

Should a Battalion Chief ever give direct orders to a Lieutenant, or should he always pass orders through the Captains?

Have you ever found yourself in a situation where you had two or more commanders giving you orders at the same time? How should this have been corrected?

Fairfax County's Fire Control Center

LAST Fall, Fairfax County, Virginia, put into operation a new Fire Control Center. Located in Fairfax Court House, the Center, with five dispatchers, is used to control the movements of paid, call and volunteer fire departments in the County.

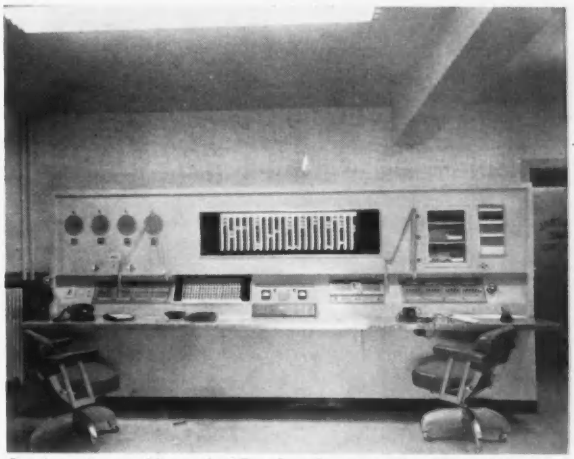
According to Chief Fire Dispatcher Arthur M. Smith, the Control Center originated in November, 1953 in a small corner of the County Police Office. At that time, fire department dispatching was handled by three men, each work an eight-hour shift on a six-day schedule. There were 16 fire companies with 68 pieces of apparatus, about half-equipped with two-way radios.

Now there are 18 fire companies with 65 pieces of fire apparatus, plus 24 ambulances and three squad trucks. All of these are equipped with two-way radios. The Control Center is manned by five dispatchers working a five-day week and three firemen trained to work as relief personnel.

The Center covers a 410 square mile area in the County and also handles the mutual aid calls for Arlington County, the City of Alexandria, Louden and Prince William's Counties and the City of Falls Church. This area includes approximately 4,000 streets within 850 subdivisions and communities. Population is about 190,000.

At present, approximately 700 calls for emergency equipment are handled each month. At the height of the brush season in March last year, the Center dispatched apparatus for 96 fires in a six-hour period. Altogether, during 1956, there were 4,800 ambulance calls, 3,200 alarms for fire and miscellaneous calls for emergency equipment.

The board can be handled by one dispatcher or two additional men can sit in to take telephone calls and perform other dispatching duties. All fire stations in the County have radio receivers as well as direct telephone connections with the dispatching office. There are 12 incoming telephone lines from various parts of the County. All radio and telephone communications handled by the Center are recorded.



Desk and panel board of Fairfax County's Fire Control Center.

The dispatchers use the identifying phrase "Fire Control," then announce the time. When a fire company is sent to an alarm site, it announces the arrival immediately by radio. Thus the messages are recorded from the time the first alarm is received until equipment arrives on the scene of emergency, as well as in subsequent action.

Base station for the Center is a 500-watt transmitter operating on an assigned frequency of 46.18 m.c. A 75-watt relay station is located approximately 10 miles east of the main station. This relays messages to and from the fire department units in the eastern and southern parts of the County.

A major contribution to the building of Fairfax County Fire Control Center was made by Radio Engineer Peter Adams who helped to develop and design the control board and who maintains the equipment in top operating condition.

Letter to FIREMEN

Gentlemen:

Will you advise me on the use of 4½-in. soft suction hose in pumping from hydrants? Some of the hydrants in our community have only 35 lbs. static pressure and are supplied by 6-in. mains. Let us assume that the residual pressure is only 5 lbs. and that we have 500 and 750 gpm pumpers to use. What volume could be drawn without collapsing the soft suction hose?

My thought is that soft suction can be connected to hydrants much more quickly than two lengths of 4½-in. hard suction. If this be practical, we would like to adopt this operation for our volunteer fire department which protects a suburban area.

Sincerely yours,
R. H. R.
Erie, Pennsylvania

Dear Mr. R:

In answer to your question relative to the use of hard or soft suction in supplying pumpers from hydrants, in general we recommend use of the large soft suction because of speed and manpower requirements. However, at very low pressures, you will get somewhat more water through a hard suction of the same size.

It is not possible to predict closely the flows from a hydrant of a 6-in. main with 35 lbs. static pressure unless some additional information is available. It should be fairly easy to measure the flow from such a hydrant by connecting the pump and noting static pressure. Put a nozzle with a 1⅛-in. tip on a pumper discharge gate and discharge at 45 lbs. and note the residual pressure on the pump inlet. This will show you the pressure drop with 250 gpm flowing. If the residual pressure is holding up pretty well, increase the discharge pressure to 75 lbs. which will give about 324 gpm. If you still have a fair residual, you can discharge at 100 lbs. which would give 374 gpm. Of course, if the nozzle is on the end of a hose, you would need to add discharge pressure to account for the loss in the hose. These figures will not be accurate unless nozzle pressures are measured with a Pitot tube, but will give a good indication of the water you can pump from the hydrant. The flows with a 1-in. tip would be 200, 256, and 295 gpm at the same pump pressures.

Very truly yours,
Warren Y. Kimball, *Manager*
Fire Services Department

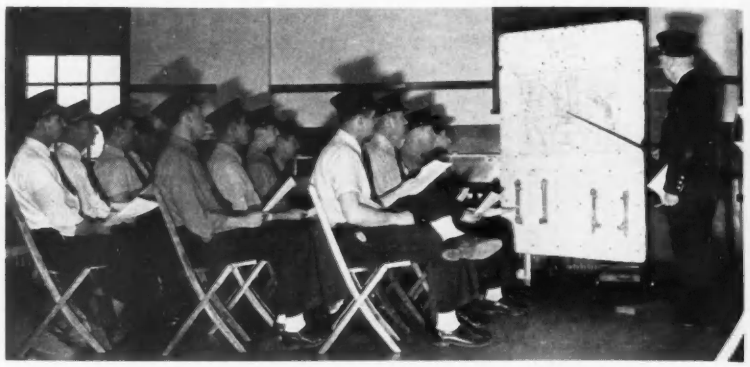
Training in Municipal Water Supply

A SPECIAL program of instruction on the City's water supply recently was started for Hartford, Connecticut, fire fighters. Chief Henry G. Thomas, who heads the Fire Department and is also Vice President of NFPA, reports that fire officers and other members of the Department are getting a much better understanding of the water supply available for fire fighting at different points in the City. Personnel of Hartford's Metropolitan Water Bureau cooperate in the training.

Purpose of the instruction is to give Fire Department personnel a general understanding of the water system, pressures throughout the City, available flows at strategic locations, and the operation and construction of fire hydrants.

A detailed sketch of Hartford's Metropolitan District water supply system and a map showing main trunk lines and sizes of the City distribution system are furnished for instructional use at each fire house. Each fire station is indicated on the map, and a list of elevations and approximate day and night pressures is also furnished. Cutaway prints of fire hydrants, showing details of construction and operation of the two types of hydrants used in the City, are also supplied for study and instruction.

Water consumption in Hartford varies between 35 and 35 million gallons per day, with peak consumption of approximately 60 million gallons per day on extremely hot summer days. Water to the distribution system is delivered by gravity, and pressures in the system vary according to difference in elevation of the filtered water basins and the point of delivery.



Hartford's Drillmaster, Deputy Chief James P. McSweegan, conducts a class in the City's water supply for one of the fire companies.

Map of Hartford water supply distributed to all fire stations.

As of January 1, 1957, there were 2,557 hydrants in the City, with an additional 140 hydrants located on private grounds. All hydrants are inspected at least three times a year, and during the winter months they are checked after every use. Alcohol is added when hydrants do not drain properly or if ground water seeps into the hydrant barrel.

The Union Street Yard of the Metropolitan Water Department is connected to the fire alarm system. All alarms within the inner fire limits of the City, which includes the congested high value district, are covered by a Water Bureau crew of two men with an emergency truck. One Bureau man in a small truck answers two-alarm fires anywhere in the Metropolitan District when he is notified. On three or more alarms, an engineer of the Bureau is also called.

Water Bureau men who respond to fire alarms locate the hydrant gates controlling the hydrants to which equipment is connected, find and uncover main line gates in the immediate vicinity of the fire, and find the gates on the large supply services which lead to the fire involved building. Their particular assignment is to shut down any hydrant that may fail or close off any main in case it is broken because of vibration of the pumpers or water hammer.

AVAILABLE FLOWS — HARTFORD

Area Designation & Location of Test	Elev.	Hydts. Used	Combined Flow G.P.M.	Pressure S	Pressure R	Gals. per Minute at 20# Residual Required	Gals. per Minute at 20# Residual Available
CV Main and Pearl Sts.	59	6	10,080	84	73	12,000	Ample
CV Allyn and Ann Sts.	44	6	8,020	90	80	12,000	Ample
MM Albany and Brook	46	4	4,580	89	81	3,500	14,600
MM Maple Ave. and King	85	5	5,730	75	61	3,000	12,000

Portion of one of the informational bulletins distributed to all stations of the Hartford Fire Department. Maps, other charts and detailed diagrams and information on the construction and capacity of fire hydrants are also sent to each station.

Pittsburgh Gets Fast, Shallow-Draft Fireboat

PITTSBURGH, Pennsylvania, recently put into service the small, maneuverable fireboat shown at upper right. Named the *C. D. Scully*, it is 70 ft. long, 20 ft. wide, has a gross weight of 98 tons, and a draft of less than 4 ft. of water. The all-welded hull was fabricated from USS Cor-Ten steel, a high-strength low-alloy product, reportedly used for the first time in fireboat construction. According to the United States Steel Corporation, this type of steel has greater yield strength and greater corrosion resistance than carbon steels of the same thickness.

The fireboat will be used for protection of the waterfront and as a source of water supply for trucks operating deeper inside the city. It will also combat fires aboard barges and ships on the Allegheny, Monongahela, and Ohio Rivers. The shallow draft was specified because fire fighting operations on the rivers will frequently require "beaching" of the craft.

When the hull was made, 3/8-inch steel plates went into the first 20 ft., while the remaining 20 ft. consisted of 5/16-inch steel plate.

The boat was built by the Paasch Marine Service of Erie, Pennsylvania, to plans and specifications prepared by Leo A. Gill, Pittsburgh City Director of Automotive Equipment. Design of the craft was based upon a similar fireboat put into service by Cleveland, Ohio, some time ago.

Pittsburgh's fireboat passed acceptance tests on December 1, 1956, and went into service January 21, 1957. It has four General Motors two-cycle, 300-horsepower diesel engines. These drive four Fairbanks-Morse pumps, each rated at 1500 gpm. When the boat is under way, the two forward diesels are used for pumping and the rear diesels are used for propulsion. All four engines can supply pump energy when the boat is not moving.

In the bottom of the hull are four sea-chest inlets, 30 inches in diameter. The three deck monitors are Eastman deluge guns of 3000 gpm capacity. There are also eight 2½-inch discharge connections.

According to Mr. Gill, one of the reasons for specifying Cor-Ten steel was its high resistance to corrosion, which was demonstrated when the same steel was utilized previously in the City's garbage trucks. Since a great deal of sulphur is shipped along one of the rivers, the corrosion resistance of this steel has proved to be desirable.

One modification specified in the design of the fireboat was to provide a special smokestack for the elimination of all exhaust fumes, thus doing away with smoke and gases which would be bothersome to the crew.

The fireboat operates with a four-man crew and captain, all members of the Pittsburgh Fire Department. Under normal conditions, it can travel between 15 and 20 miles per hour. It has good maneuverability and can make a complete turn in its own length. It is reported to have cost $95,000 to build and equip.

Timely Reprints

THE NFPA recently published a number of reprints from *Fire News* and the *Quarterly* which will be of particular interest and use to fire fighters. The reprints cover many timely and informative topics and should be popular additions to fire station libraries.

The detailed reports on the tragic nursing home fires in Warrenton, Missouri and Council Bluffs, Iowa are available as a 6-page reprint from the March issue of *Fire News*. These reports give thorough analyses of the structures, fire spread and fire causes and add some of the minimum recommendations of the Building Exits Code relating to nursing homes. Write to the NFPA Publications Department for reprint No. FN462–2, price 25 cents.

Also available at 25 cents each are the following reprints from the 1956 and 1957 issues of the NFPA *Quarterly:*

Q50–1	Engineering Lessons of the 1955 Large Fires
Q50–2	Roof Vents for Fire and Smoke
Q50–3	Texas Refinery Tragedy
Q50–4	Fire Tests of Fire Retardant Treated Wood
Q50–5	Fires and Fire Losses Classified, 1955
Q50–6	Water Cooling Towers Will Burn!
Q50–7	Combustible Fibreboard Tile Ceiling Fire
Q50–8	Testing for Fire Safety

An Imperative Need

Lower Merion had every reason to be grateful to Philadelphia for its assistance at the Autocar fire last week . . . and ultimately it may be grateful for more than the immediate aid given during the fire. The whole Main Line may eventually owe the Philadelphia fire department a permanent debt of gratitude for introducing it to the "Giant Deluge" type of fire hose and pumper, and for opening local eyes to the unquestionable need for an equivalent piece of apparatus out here.

Eye witnesses credit the Giant Deluge (which was developed by the Philadelphia fire department and can pour 2000 gallons of water a minute on a fire from a distance of 300 feet) with preventing the spread of the Autocar fire to the adjoining business district. Many observers are convinced that the Giant Deluge turned the tide at a point when the fire, which had a good headstart, could have turned into a holocaust.

Whether this was actually the case or not will never be known. But there can be no doubt about the fact that a community like the Main Line, with its clustered commercial districts and large apartment buildings, needs something like the Giant Deluge. How one can be obtained we do not know at the moment. But the Times has been sufficiently impressed by it to pledge all-out support to any serious effort to make a similar piece of equipment available to the Main Line's fire companies.

The above editorial appeared in the Main Line Times, Ardmore, Pa., shortly after the Autocar fire. Reprinted by permission.

INTELLI-GIANT TURNS THE TIDE AT MAJOR AUTOCAR FIRE!

Rushed from nearby Philadelphia, the SS-99, equipped with a Chiksan Intelli-Giant, was pressed into immediate service at the Autocar fire. Shifting wind-swept flames threatened to destroy the eastern end of the Autocar Building and nearby businesses. Within minutes after the torrent from the Intelli-Giant was directed on that area of the building, the flames were smothered and their spread arrested—dramatic proof of the drenching power afforded by this remarkable master stream monitor.

Your town or plant can well benefit from the fire suppression advantages this powerful monitor offers. The Chiksan Intelli-Giant, equipped with a 3" nozzle, is capable of delivering up to 2500 gpm, a far reaching 425' in distance, and 165' in height, yet it actually costs less than ordinary monitors. Send for literature and prices today

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Record in "Large Loss" Fires

DURING 1956 North America suffered a devastating and record-shattering increase in the number and dollar loss of "large loss fires." According to the April 1957 issue of the NFPA *Quarterly*, there were 430 large loss fires in the United States and Canada which resulted in a total direct loss of $330,156,000, much larger than previously "worst" years. The direct dollar loss is $50 million greater than the previous record loss of 1953. Industrial fire losses in this category were the highest in history.

Reprints of the large loss fire report are available from the NFPA Publications Department.

Chicago Starts In-service Fire Inspections

UNDER the direction of Fire Commissioner Robert J. Quinn, the Chicago Fire Department in April began a program of in-service inspections by radio-equipped fire companies. Commissioner Quinn indicated that the program is intended to educate building occupants about fire hazards and acquaint fire fighters with buildings in which fires may occur. The inspection is intended to cover 100,000 non-residential buildings over a two-year period beginning in the central business district. A similar program for dwelling inspections is being planned.

Correspondence Course

FROM time to time the editors of FIREMEN Magazine receive requests about correspondence courses. Accordingly, the following information may be helpful.

The National Preparatory Institute, 33B Sweetser Terrace, Lynn, Massachusetts, conducts a specialized course of instruction for examination preparation. According to the Institute, the correspondence course is designed for lieutenants, captains, district chiefs, deputy chiefs and chiefs of Massachusetts Fire Departments. Registration fee and the first lesson cost $3.00; all other lessons cost $2.00 each. Students taking the course can study at home and send in their lessons which are corrected, graded and returned with authoritative source material for the questions covered. For further information write to the Institute at the above address.

Horoscope Calendar

BASE Fire Chief James C. Bowen, DAFC, 3rd Installations Squadron, APO 994 C/A P.M., San Francisco, California, reports that his fire fighters are distributing a calendar in a fire prevention campaign.

The calendar for each month has a pertinent horoscope statement that describes persons born in that month. Following this statement are several important fire prevention tips that apply to that particular time of the year.

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FD CUFF LINKS — gold finish — lacquered — pair $2.50.

FD TIE CLIP — gold finish — lacquered — $1.98.

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Also available car emblems for Aux. Fire Dept., Civ. Defense, Civ. Air Patrol, all fraternal, professional and civic groups — same price. Money - back guarantee.

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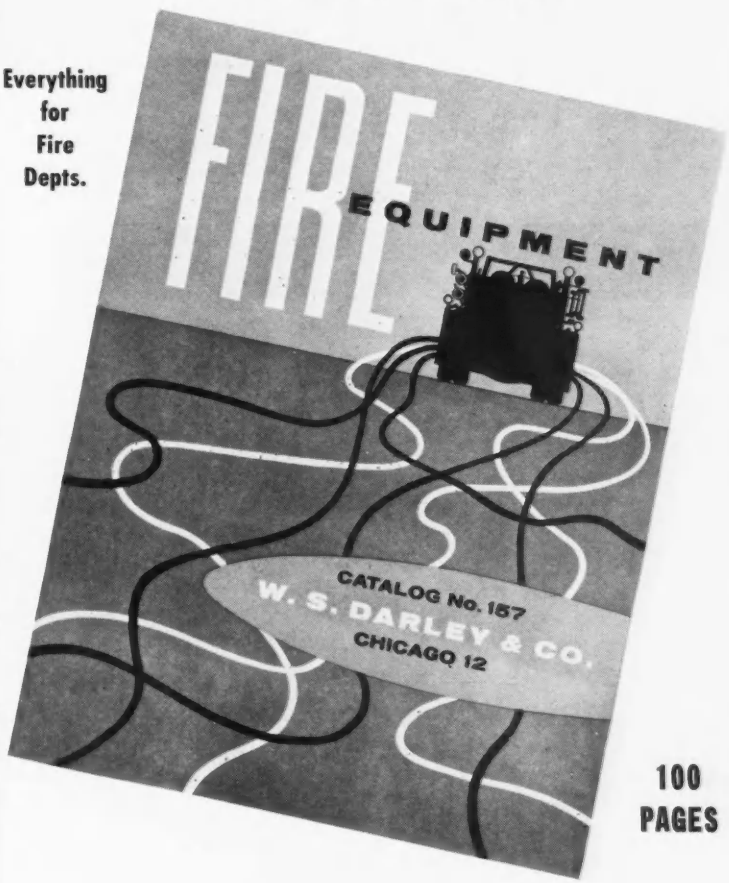
Everything for Fire Depts.



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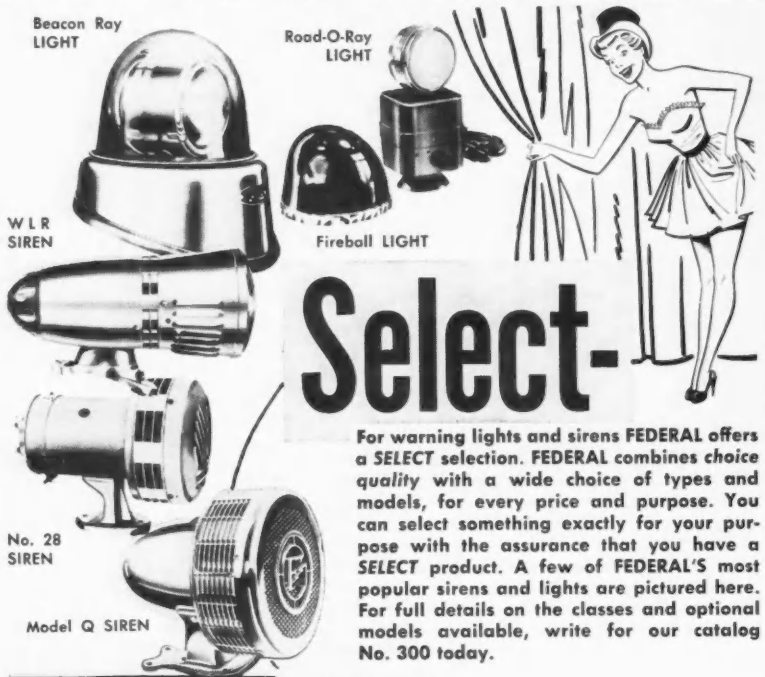

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Public School Fires

THE NFPA Fire Record Department has published FR57-1, "Public Schools," a 24-page 8½ x 11 in. pamphlet which presents a thorough study of public school fires. It provides helpful information on the prevention of loss of life, injuries, and property damage in public schools. Summaries of fatal school fires and descriptions of recent significant fires in schools are also included. The back section of the pamphlet contains tables of causes, fire protection weaknesses, place of origin, and other applicable analyses together with excerpts from NFPA standards pertinent to school buildings.

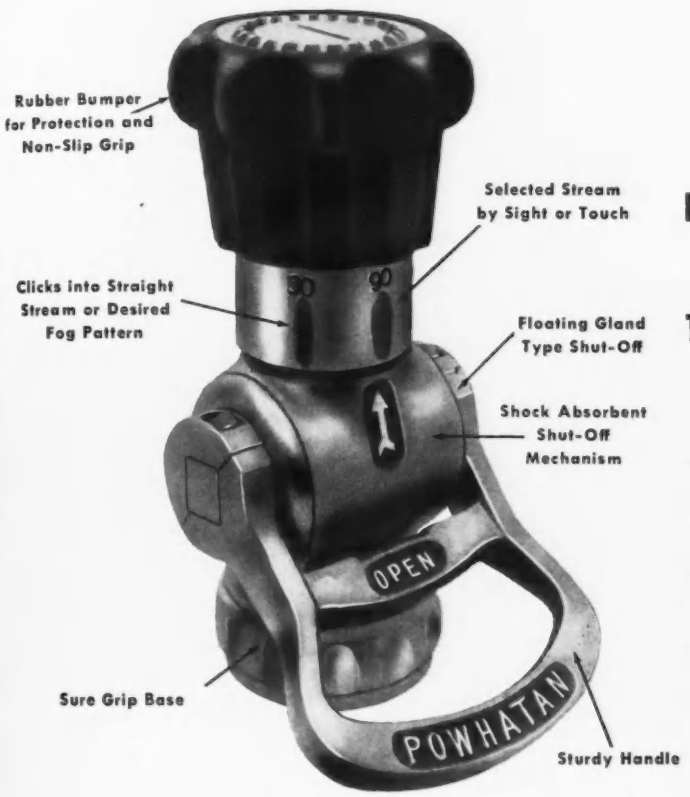
This is the 27th in the Occupancy Fire Record series. A complete list of previous publications in this series is available upon request to the NFPA Publications Department. Single copy price of any occupancy fire record is 50 cents. Generous discounts are allowed for quantity purchases.

Fire Prevention Award

Lt. Gen. Glenn O. Barcus, Comm., Northeast Air Command, presents NFPA Fire Prevention Week Contest Grand Award to Col. G. S. Bond, Comm., Pepperrell Air Force Base, Newfoundland. The Base compiled the winning entry for U. S. Air Force units that took part in last year's Fire Prevention Week Contest. Judging of the military division was based on year-round fire prevention activities.

NEW DURA-FOG NOZZLE by POWHATAN

NAMED FOR ITS DURABILITY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NO LEAK in over a million shut-offs . . . test proof of durability!

100% PERFORMANCE TEST for every Dura-Fog Nozzle!

Performance Test Data for 1½" Size

Water Pattern	GPM	Reach	Nozzle Pressure
STRAIGHT STREAM	57 62	85' 105'	100 psi 125 psi
30° FOG PATTERN	60 65	40' 43'	100 psi 125 psi
60° FOG PATTERN	65 68	30' 35'	100 psi 125 psi
90° FOG PATTERN	72 75	20' 22'	100 psi 125 psi

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PORTO-RAK is the modern way to handle, store and load hose.
PORTO-RAK holds 1800 feet of 2½" hose and proportionally more of 1½" hose in an 8½' space (loading table detached). Easy, convenient to use. Roll it right up to the truck for complete hose reload — out of the way when not in use. Equipped with locking fiber-wheeled casters. Why lug hose? Let PORTO-RAK do the work!
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DETROIT 2, MICHIGAN

40 Hours for Montana Fire Fighters

CHIEF Sidney F. Morse, of the Billings, Montana, Fire Department, reports that new laws enacted by the Montana Legislature grant all city, state, and county employees, including policemen and fire fighters, a 40-hour, 5-day work week. Fire fighters and policemen also were granted a minimum salary of $350 per month plus a one percent increase annually for 20 years. These bills become effective July 1, 1957.

Montana pioneered the 48-hour law for fire fighters in 1937, and subsequently most cities have been allowing every sixth day off, resulting in a 46-hour work week. Montana fire fighters are to be congratulated in establishing another State-wide "first" in their efforts to provide better working conditions for the professional fire service.

Fire Fighting on Ships

ON OCCASION, we receive inquiries from fire service members asking for reference material on shipboard fire fighting. The NFPA librarian has compiled the following list of publications on this topic indicating the publishing house, number of pages, and the price of each book. Readers interested in this subject can obtain the publications or additional information by writing to the appropriate addresses. (Postage is not included in prices listed. Approximate U. S. equivalent of British prices shown in parentheses.)

Back copies of the NFPA *Quarterly* are not available but the references are included for fire departments and other organizations which keep a complete file of NFPA publications.

U. S. References

Fire Fighting — Ships, Chapter 93 of the Bureau of Ships Manual. Published by: Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price: 55¢ per copy.

Reference in NFPA Quarterlies:

The Navy's Fire Fighters. October 1942, Vol. 36, No. 2, p. 109.

Experiments in Merchant Ship Fire Fighting. April, 1945, Vol. 38, No. 4, p. 258.

Recent Port Ship Fires and Explosions. October, 1947, Vol. 41, No. 2, p. 108.

Safety of Life From Fire at Sea. July, 1949, Vol. 43, No. 1, p. 47, (Report of 1948 London Conference).

Fire Protection on Modern U. S. Passenger Ships. October, 1950, Vol. 44, No. 2, p. 123. (12-page reprint available from NFPA Publications Department. Price 20 cents.)

British References

Ships and Fire, Compiled by J. A. Jerome & Norman Henderson, 4th Ed., 86 pp. Published by: Charles Birchall & Sons, Ltd., 17 James St., Liverpool, 2. Price: 1 Shilling. (14 cents)

Fire Fighting on Ships, by Edward W. Reanney, 1946, 112 pp. Published by: Brown, Son & Ferguson, Ltd., 52-58 Darnley St., Glasgow, S. 1. Price: 7 Shillings, 6 Pence. ($1.07)

Manual of Firemanship, Part 7 — Fireboats and Ship Fires, 1944, 149 pp. Published by: Her Majesty's Stationery Office, York House, Kingsway, London, E. C. 4. Price: 2 Shillings, 6 Pence. (35 cents)

Fighting Ship Fires, Series of Articles in Fire Protection Review (Periodical).

Part I Know Vessels and the Language of Shipping, May, 1952

II Vessels' Normal Fire Protection Arrangements, June, 1952

III Buoyancy, Stability and Flooding during the Operation, July, 1952

IV Outbreaks during Construction, September, 1952

V Outbreaks in Passenger and Cargo Vessels, November, 1952

VI Outbreaks in Special Vessels, December, 1952

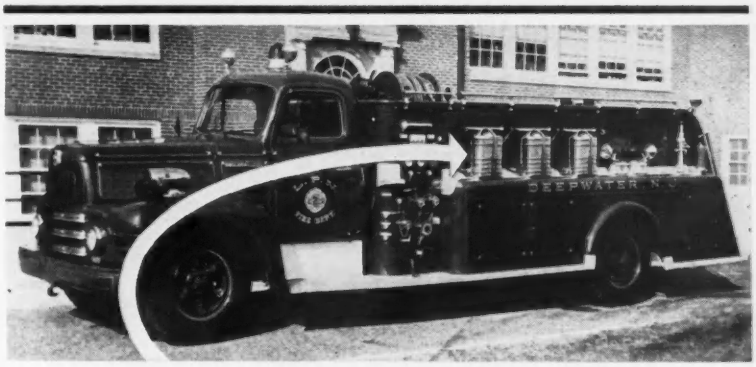
VII Outbreaks in Vessels of the Royal Navy, February, 1953

Published by: Benn Brothers, Ltd., Bouverie House, Fleet St., London, E. C. 4. Price: 1 Shilling, 10 Pence (Single copies). (25 cents)

Forest Fire Study

THE U. S. Department of Agriculture has announced that an industrial research firm (Battelle Memorial Institute, Columbus, Ohio) has signed a contract with USDA's Forest Service to make a study of ways the federal government, states, and private land owners can share cost of protecting non-federal lands from forest fires.

The study will determine the dollar value of the resources of non-federal forest ane watershed lands which should be protected from fire. It will include the degree of forest fire protection needed for these lands, the fire protection now given, and the extent to which the public agencies and private owners should share in the cost of this protection.



INDIAN

FIRE PUMPS Complete Your Truck Equipment . . .

H. & H. Fire Apparatus Co., of Jersey City, N. J., built the above truck delivered to Deepwater Fire Department, Deepwater, N. J. It is equipped with chrome plated **INDIAN FIRE PUMPS.**

Famous **INDIAN FIRE PUMPS** are standard equipment on more and more new fire trucks. They have no equal for fighting so many types of small fires. They belong on *your* trucks, too.

"THERE IS NOTHING ELSE LIKE THEM"

"We have 6 of your **INDIAN FIRE PUMPS** on one of our fire trucks and we have used them 8 years. They are still **just like new.** They are the best things a fire department can have. I have used them for everything, including grass, house, barn, rubbish and many other kinds of fires. We like them very much. **There is nothing else like them."**

EARL L. KOCH, Assistant Chief,
Ann Arbor TWP F.D.,
Ann Arbor, Mich.

No. 90 INDIAN SLIDING PUMP TYPE

No. 80 INDIAN LEVER TYPE PUMP and HANDLE

Both types of INDIAN FIRE PUMPS are approved by UNDERWRITERS' LABORATORIES, INC.

Fire Chiefs say **INDIANS** are "worth their weight in gold."

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L. M. Curtis & Sons, Salt Lake City, Utah

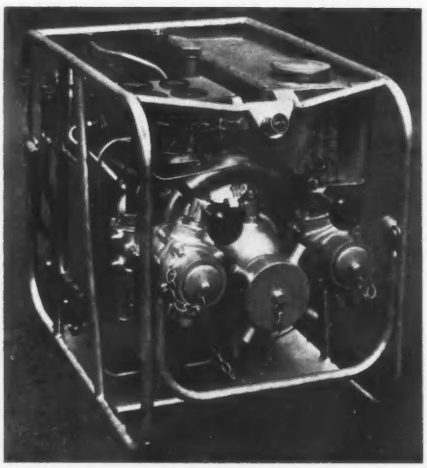
CANADIAN AGENTS

Flock Bros. Limited, Vancouver, B.C.
C. E. Hickey & Sons, Ltd., Hamilton
Bison Hardware Co., Toronto

Gas Turbine Portable Pump

IN ENGLAND recently, the fire services have been experimenting with a new, lightweight gas turbine portable pump. Built by Rover Gas Turbines, Ltd. (offices in Solihull and Warwickshire), the pump has a number of interesting characteristics which should be of interest to fire departments in North America.

According to information received from the manufacturer, the pump can deliver up to 500 Imperial gpm (600 U. S. gpm) at 100 pounds pressure with a ten-foot static lift. It measures 25⅝ in. in height, 33½ in. in length, and 20½ in. in width. The pump has a 4-in. suction intake and two 2½-in. discharge connections. Maximum lift is reported to be 25 feet.



(Left) Rover gas turbine portable pump uses gasoline, kerosene, diesel or other distillate fuel at a rate of ¼ lb. / bhp / hr. The turbine rotates at 14,500 rpm and gear reduction produces 3,600 rpm at the pump shaft.

Correction Notice!

On page 16 of the May issue of FIREMEN magazine, Mr. Alan L. Kling was incorrectly listed as "Director, Safety and Loss Prevention Department, American Cyanamid Company, New York City." Mr. Kling is Assistant Director of this department. Mr. Stanley F. Spence, member of the NFPA Industrial Committee, is Director of American Cyanamid's Safety and Loss Prevention Department.

Priming is accomplished by a lever-operated air ejector assembly fitted to the pump casing. The ejector is supplied by compressed air at 25 to 30 pounds pressure from the gas turbine, and primes the pump, operating with 25-ft. lift in 25 seconds. The unit is started by hand and full operating speed is obtained in a few seconds.

Weight of the complete pump is approximately 225 pounds. The main structural member is the compressor housing, an aluminum alloy casting containing the impeller, the front main bearing and the reduction gearing. Two air intakes are at the sides. The base of this housing forms the oil sump pit of the engine.

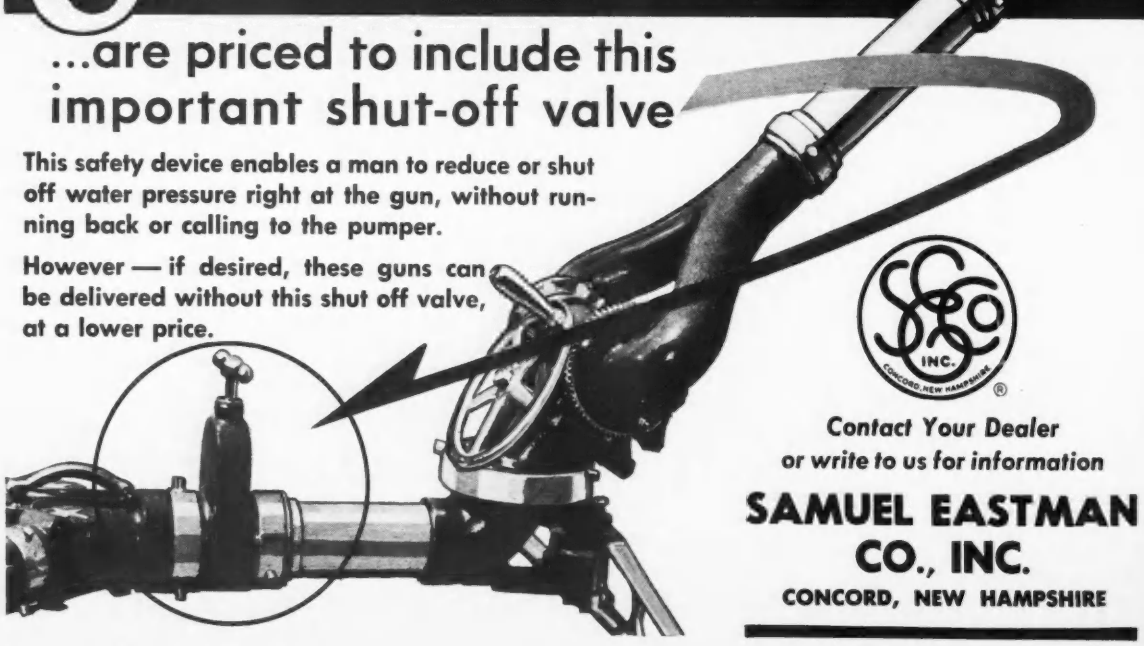
There is a nine-vaned radial diffuser which is a separate aluminum component. Since the turbine in operation creates considerable heat (rated power of 60 hp. is with jet pipe temperature of 1112 degrees Fahrenheit), a heat shield is installed to provide protection for the diffuser turbine bearing and support plate. Cooling air also passes through internal passages to a cooling ring. The exhaust cone and its inner cylinder are of stainless steel.

Eastman PORTABLE DELUGE GUNS

...are priced to include this important shut-off valve

This safety device enables a man to reduce or shut off water pressure right at the gun, without running back or calling to the pumper.

However — if desired, these guns can be delivered without this shut off valve, at a lower price.



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Designed by Voorhees, Walker, Smith and Smith. Built by George A. Fuller Construction Company

protected throughout by **ADT** Central Station

AERO

AUTOMATIC FIRE DETECTION and ALARM SERVICE

Completely modern, this beautiful addition to the home office building group of The Travelers Insurance Company combines safety with efficiency and comfort. Like all other Travelers buildings at Hartford, it is equipped with Aero, the pneumatic rate-of-rise system, which detects fire and summons the fire department *automatically*.

Aero protection covers every floor of every building in the home office group. It extends to the very tip of the famous Travelers Tower, 527 feet above street level. There are 211 Aero circuits comprising approximately 36 miles of inconspicuous copper tubing, 1/12" diameter. Even the ornate ceiling of Batterson Hall presented no problem because Aero does not detract from interior decorations.

Whether your project is large or small, there is an ADT *Automatic* Protection Service to meet every requirement. Thousands of concerns from coast to coast depend on ADT for better protection against fire, burglary and other hazards, *at lower cost*. Our local sales representative will be pleased to discuss your problem. Call us if we are listed in your phone book; or write to our Executive Office.

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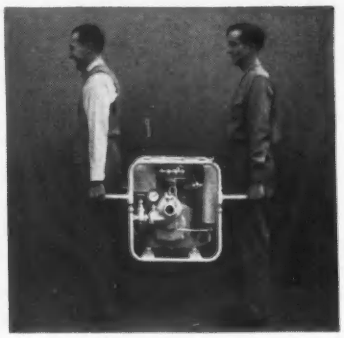
With Amazing Performance

HALE Portable Pumping Units

	U. S. Gallons Per Minute	Disch. Press. Lbs. Per Sq. In.
FZZ*	60 100	90 70
FZ	50 300	60 10
HPZF	15 28	200 150

*FZZ now has NEW Ball-Type Discharge Valve, Improved Priming.



These 3 pumping "Workhorses" provide amazing volumes and pressures for efficiently fighting a great variety of fires. All three units are conveniently portable by two men; can be easily mounted or carried on any type of apparatus for fighting fires while in motion from booster tank; often used to pump from inaccessible water source into major pumper, or to fight fires direct.

Fire Pumps in All Standard Capacities

Write for Circulars on Models FZZ, FZ and new HPZF—at least one of which is sure to meet your fire fighting requirements. Ask for demonstration; no obligation.

HALE FIRE PUMP CO.
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MIDWESTERN

Safety Clothing

for Men of ACTION!

The Original MIDWESTERN
STRIPED SAFETY COAT
Reduces Accidents — Saves Lives!

When working under hazardous conditions in smoke, fog, dust and darkness, you deserve the safety protection found only in the Midwestern Striped Safety Coat. The highly visible yellow stripes are *rubberized as part of the material* . . . not glued, painted or sewed on.

There are many imitations but no substitute for Midwestern quality, design, fabric texture and safety features. For complete information see your Midwestern dealer. A letter to the factory will also bring you literature and materials for your inspection.

MIDWESTERN SAFETY MFG. CO. Mackinaw, Illinois
Manufacturers of the Famous MACKINAW Safety Coats

Fire School Dates

Arizona: The 5th Annual Arizona State Fire Training School will be held at Phoenix, October 17–19. Write to Battalion Chief Jake Siken, Firefighting Instruction Supervisor, 49 South First Street, Phoenix, Arizona.

Idaho: The Idaho State Fire School will be held in Idaho Falls, August 15–17. Write to Chief Bert O. Brown, Fire Department, Idaho Falls, Idaho.

Indiana: The 24th Annual State Fire School will be held at Purdue University, Lafayette, September 10–13. Write to Professor Shelby Gallien, Director Public Safety Institute, Purdue University, West Lafayette, Indiana.

Kansas: The 28th Annual State Fire School will be held at the University of Kansas, Lawrence in October. Write to Director Clyde A. Babb, 111 Fraser Hall, University of Kansas, Lawrence, Kansas.

Maryland: The 24th Annual Short Course for Firemen will be held at the University of Maryland, College Park, September 3–6. Write to Director Robert C. Byrus, Fire Service Extension, Box 85, College Park, Maryland.

Montana: The 18th Annual State Firemen's School will be held at Polson, August 21–24. Write to Director Clayton Brown, Fire Chief, Polson, Montana.

New Mexico: The Fire Marshals' Fire Protection Conference will be held at Roswell, August 21–23 and Las Vegas, August 25–27. Write to Director John B. Woodall, Deputy Fire Marshal, P.O. Box 311, Santa Fe, New Mexico.

Ohio: The 11th Annual State Fire School will be held at the Ohio State University Campus, Columbus, September 9–13. Write to Co-Director Wayne C. Jenkins, Chief of Fire Prevention, State Fire Marshal's Office, Wyandotte Building, Columbus, Ohio.

Pennsylvania: The State Fire School at Lewistown will be held August 5–10 and 12–17. Write to Director Arthur W. Espey, Adviser, Fire Service Training Public Service Institute, Box 631, Lewistown, Pennsylvania.

Tennessee: The State Fire Service School at Middle Tennessee State College, Murfreesboro, August 19–23. Write to Director Homer S. Elkins, Firemanship Instructor, Trade and Industrial Division, State Board for Vocational Education, 215 Chestnut Street, Chattanooga, Tennessee.

Virginia: State Fire School, Number 9 Fire Station, Thole Street, Norfolk, September 9–13. Write to Director R. Lawrence Oliver, Supervisor-Instructor Fire Service Training, P.O. Box 654, Harrisonburg, Virginia.

Many members of the fire service and a number of buffs and "fire fans" throughout the country will regret to learn that Joseph L. Hallett of Norwell, Massachusetts, publisher of the "Visiting Fireman," died on May 9th.

A former Deputy Chief of the Norwell Fire Department, he also served on the Town's Board of Fire Engineers for several terms. He was a member of the New England Association of Fire Chiefs and the Fire Chiefs Club of Plymouth County. In addition to publishing the nationally circulated "Visiting Fireman" he was an enthusiastic collector of fire photos and fire fighting equipment. He also was active in organizing and participating in a number of the volunteer firemen's musters conducted in the New England states.

Pamphlet on "Sparky"

THE NFPA Public Relations Department has published an informative 4-page booklet describing the purpose of the Sparky program and Sparky's Fire Department. This should be of interest to a number of fire chiefs.

Started in 1955, Sparky's Fire Department, sponsored by NFPA, now has an enrollment of more than 80,000 children who have joined either through locally sponsored Sparky units or by sending 25 cents to Sparky's Fire Department, Official Headquarters, Boston 1, Massachusetts.

The descriptive booklet is available at no charge to anyone interested in developing Sparky units in their community, or who wants to enroll individual children. Simply send a note to the NFPA Public Relations Department, 60 Batterymarch Street, Boston 10, Massachusetts, and ask for "The Story of Sparky's Fire Department."

Virginia State Fire School

The 21st Annual State Fire School will be held at Thole Street Fire Station, Norfolk, September 9–13, with R. Lawrence Oliver, Virginia State Fire Instructor, as Director. This school, which has served Virginia firemen on a statewide basis for many years, is sponsored by the Virginia State Department of Education with the cooperation of the State Fire Chiefs' Association of Virginia, the League of Virginia Municipalities, and the Virginia State Firemen's Association.

folds flatter, flips off faster, fights fire faster...

BECAUSE IT'S *flexible!*

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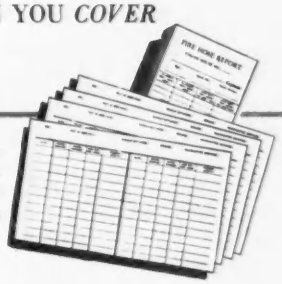
FIRE HOSE

BI-LATERAL ACTUALLY *DOES* LOAD 25 to 40% *MORE* HOSE on the PUMPER—AND IT ACTUALLY *IS* EASIER TO HANDLE... WHICH REALLY *DOES* MEAN YOU *COVER MORE FIRE FASTER!*



Send for Bi-Lateral's free hose record cards —used by hundreds of fire departments throughout the country . . . they'll *prove* to you that Bi-Lateral lasts longer . . . costs less in the long run.

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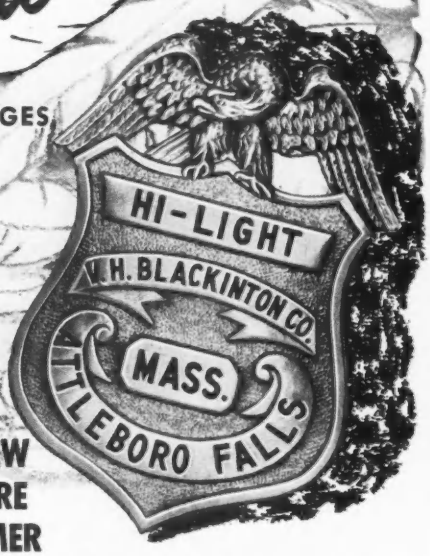
FEATHER WEIGHT

Hi-Light

THE NEWEST IN BADGES



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Think of it — a badge that's two thirds lighter than your regular badge, in fact it's so light you hardly know you're wearing it. In spite of its feather light weight, your HI-LIGHT metal badge is durable and it's made with the same high quality deep cut precision die work and gleaming finish that has made BLACKINTON badges famous.

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Please send me your free and complete information on BLACKINTON badges.

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☐ I would like to know more about the new HI-LIGHT metal badges.

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Connecticut Fire College

THE Annual Connecticut Fire College will be held at the new Eastern Connecticut Firemen's Training Grounds in Willimantic, June 10–15. On Saturday, June 15, the popular "Firemen's Field Day" will be conducted by the Connecticut Drillmasters' Association.

There is no tuition charge for the training classes. Transportation, rooms and meals constitute the only expense. For information and registration forms write to Roy W. Adams, Director, Vocational Training Field Service, 490 Capitol Avenue, Hartford, Connecticut.

Mutual Aid Legislation

ASSISTANT Chief Earl F. Olson of the Norris, Tennessee, Fire Department reports that Governor Clement of that state recently approved legislation to permit mutual aid contracts for fire protection. House Bill No. 614, approved on March 19, authorizes incorporated cities and towns to enter into contracts with each other to furnish assistance in fire fighting; to provide that in answering outside fire calls, the incorporated city, town and its employees shall be acting in a governmental capacity; and to grant to employees of fire departments all rights, privileges, exemptions and immunities "as if performing duties within the corporate limits of the incorporated city or town by which they are employed."

Fire School for Merchants

READERS of FIREMEN Magazine will recall that the Greenfield, Massachusetts, Fire Department last year initiated a very successful baby sitters' training program. Chief S. R. Zanieski who heads the Department now reports a new fire prevention venture.

The Department, in the past few months, has been conducting a special fire school for merchants in the Greenfield area. The sessions have an average attendance of more than fifty businessmen. A typical program includes a film; instruction by Deputy Chief Edmond F. Tetreault on types of fire extinguishers and their uses; instruction on fire safety by Fire Inspector George P. Billings; and a guest speaker. Chief Zanieski serves as moderator.

Fire Service Pay

THE April 1957 issue of the *International Fire Fighter* magazine contains the salary schedules of most of the fire departments in the United States and Canada having paid employees. These tables, published annually, are worth considerable study by fire chiefs, fire fighters, and others interested in the fire service. The International Association of Fire Fighters is to be complimented for making this data available each year.

Several facts stand out. One is that fire department salaries, in general, are far too low when compared either with the present cost of living or the qualifications demanded of fire fighters. Obviously, the top paying job in most instances is the fire chief's. Yet, in 31 paid departments the chief's job pays less than $75 a week and in 250 more it is less than $100 a week. Only 44 fire chiefs have salaries over $200 a week and about 100 more get between $150 and $200 a week. Compared with wages that skilled workers get in other fields, the fire fighters' pay is low, especially on an hourly basis. Well under ten percent, of the nearly 1,000 fire departments listed, reported top pay for fire fighters at $100 a week or more.

The distinction of being the highest paid fire fighter in the United States goes to Chief Engineer Keith D. Klinger of Los Angeles County with an annual salary of $18,524. In fact, of 44 chiefs of department getting better than $200 a week, 16 are in California cities and 19 other California chiefs get better than $150 a week. In a number of California cities, the deputy fire chief also receives more than $200 weekly.

Fire Prevention Parade

THE Jamestown, New York, Fire Department Benevolent Association will hold its Annual Fire Prevention Parade Saturday, September 14th, in Jamestown. Prizes totaling more than $1,500 will be awarded to participating organizations. For full details write to Parade Secretary Martin Hagstrom, Fire Department Headquarters, Jamestown, New York.

Changing address? Be sure to notify the NFPA Executive Office.

MORE FIRE-FIGHTERS DIE

of smoke and fume inhalation than from heat and flames!

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The Fireman with the Scott Air-Pak breathes SAFELY in any Atmosphere

Excessive smoke inhalation can have cumulative effects which in time can result in various disabilities and even tend to shorten life. Without complete Scott Air-Pak protection fire fighters can enter the realm of unhappy statistics.

But to the man who wears a Scott Air-Pak, the above is what happens to the other fellow. With Air-Pak protection the fireman enjoys cool, fresh air with every breath, no matter how thick the smoke gets.

And the new SCOTTORAMIC Mask gives vision unlimited — wide angle vision in all directions that helps firemen to spot danger zones quickly.

Scott Air-Paks give the greatest protection at the lowest cost. Write for complete information, or contact your nearest Scott Distributor.

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Free decals for your car.
Write for yours today.

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Canada: Safety Supply Co., Toronto — Branches in Principal Cities

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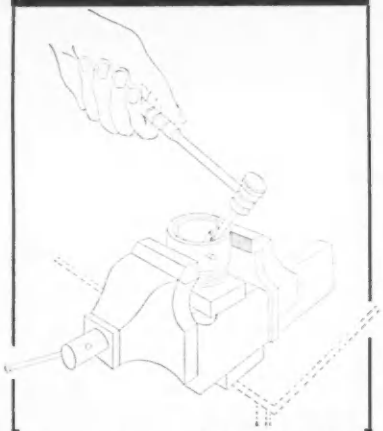
New EXPANSION RING EXTRACTOR
EASY — FAST — SAFE



Now you can remove all sizes of Expansion Rings in SECONDS with

- No damage to coupling
- No injury to mechanic

The newest and most modern tool in the fire service . . . . $9.75 ea.

BELL & PIHL COMPANY
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Dealer Inquiries Invited

MEMBERSHIP REPORT

Total membership in the National Fire Protection Association now has exceeded 17,000. This includes more than 2,300 municipal paid, call and volunteer fire departments and 280 industrial and institutional fire brigades. Present circulation of FIREMEN Magazine to fire fighters in these organizations now exceeds 28,000. Fire department membership in NFPA has been increasing steadily since the first of the year.

Obviously, the next goal is to obtain 20,000 members in the Association. With the cooperation of fire chiefs and many other members of the fire service, this can be accomplished. If a neighboring fire department or volunteer fire company in your community does *not* have NFPA membership why not show them this copy of FIREMEN Magazine? Explain that for $15.00 per year each municipal fire department which joins the Association can obtain four subscriptions to the magazine plus single subscriptions to the NFPA *Quarterly* and NFPA *Fire News*. Additional subscriptions to FIREMEN cost only $2.00 each per year.

NFPA Welcomes:

The following fire chiefs and fire departments who recently joined the Association:

Alberta: Stony Plain Fire Department, Stony Plain.

Arizona: Williams Volunteer Fire Department, Williams.

California: Chief D. Vincent, Delano Fire Department, Delano; Dinuba Fire Department, Dinuba; Fullerton Fire Department, Fullerton; Montecito Fire Department, Santa Barbara; Spring Valley Fire Department, Spring Valley; Tahoe City Fire Protection District, Tahoe City.

Florida: Atlantic Beach Fire Department, Atlantic Beach; Key Biscayne Volunteer Fire Department, Miami; Chief Ed. Bailey, Oakland Park Fire Department, Oakland Park; Southwest Volunteer Firemen's Association, West Palm Beach.

Illinois: York Center Fire Protection District, Lombard.

Indiana: Francesville Volunteer Fire Department, Francesville.

Maryland: LaVale Volunteer Fire Department, Inc., LaVale; Leonardtown Volunteer Fire Department, Inc., Leonardtown.

Massachusetts: Wareham Forest Wardens Association, West Wareham.

Michigan: Grand Haven Township Fire Department, Grand Haven.

Missouri: Affton Fire Protection District, Affton; Chief John F. Dishon, Crestwood Fire Department, Kirkwood.

New York: Oxford Hook & Ladder Company, Inc., Oxford; Carman Volunteer Fire Department, Inc., Schenectady.

Newfoundland: Corner Brook Fire Department, Corner Brook.

North Carolina: Wadesboro Volunteer Fire Department, Wadesboro.

Nova Scotia: Mahone Bay Fire Department, Mahone Bay.

Ontario: Chief A. Watson, Lindsay Fire Department, Lindsay.

Oregon: John Day Volunteer Fire Department, John Day.

South Carolina: Greenville Fire Department, Greenville; Greenwood Fire Department, Greenwood.

Vermont: Chief Francis D. Walker, Bennington Fire Department, Bennington.

Virginia: York Volunteer Fire Department, Grafton; Chief R. T. Glascock, Warrenton Volunteer Fire Department, Warrenton.

CAIRNS
PLASTIC
FIRE HELMETS

The "CLIFTON"
(No. 900 — Regulation)

Also offered in The "CAVALIER"
(No. 725 — Drop Brim with regulation front)

Regulation 8-comb style, or drop brim style with standard front; made of FLINT-FLEX, the rugged plastic that is light, tough, flexible and non-conducting; has the new FORMABLE HEAD BAND that can be moulded to your own particular head shape; complete protection at moderate cost. Other CAIRNS HELMETS in leather and aluminum.

Write for Catalog 350

CAIRNS & BRO., Inc. — Allwood, Clifton, N. J.

WOOSTER BRASS MANGA-FORGE COUPLINGS

Proven best for all types of fire hose!

STRONGER

Combines the strength of manganese with shock-proof quality of forged bronze alloy. Extra reinforcing ring in hose bowl expansion area means added strength in the most critical area.

LIGHTER

Structurally engineered for minimum weight. Yet Manga-Forge couplings carry a wide margin of strength to sustain shock, stress and impact.

MORE DURABLE DESIGN

Special reinforcing rings protect parts of coupling most susceptible to abrasion and shock — the threads, swivel and hose bowls.

YOU ALSO GET THESE EXTRA SERVICE FEATURES

- **PRECISION SERRATIONS** greatly reduce jacket shearing action under severe pressure, surge and shock.
- **TAPERED BOWL** prevents slipping, creeping and blow-off under any fire pump pressure.
- **KEEPS PERFECT ROUND** with Wooster's special hose bowl reinforcing rings. Prevents frozen threads, leaking connections and other damage.
- **NON-LEAK CONSTRUCTION**—Precision construction at gasket seal means long, leak-proof service under highest pressures.

HOW TO SPECIFY MANGA-FORGE COUPLINGS

Couplings to be forged from a manganese-bronze alloy, with reinforcing rings located at the mid-section of the hose bowls. Three rocker-type lugs on the male and swivel with Higbee indicator.

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NIELSEN-RIONDA

Introduce their amazing new metal

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The wonder metal! It polishes for a life-time to a rich brilliancy and looks like 14 Kt. Gold. The entire badge body throughout is made of STA-BRITE

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PLUS — all the advantages of superior durability and added body of the EXCLUSIVE NIELSEN-RIONDA solid flat back

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Manufacturers' Announcements

Full-Vision "Spec" Mask

For gas mask wearers who require eye glasses for safe, accurate vision, Acme Protection Equipment Company, 1271 Kalamazoo Street, South Haven, Michigan, has just announced a new face piece with built-in spectacle frames. It incorporates a support bracket that mounts the spectacle frame for standard lenses ground to the wearer's prescription. This assures proper mask fit around the temples and ears. The mask also features large plastic outer lenses shaped to provide adeuate space for wearing glasses comfortably, and is furnished complete with spectacles made up to the wearer's prescription or can be supplied with spectacle frames only, for user to have personal lenses inserted. Full details can be obtained from the company at the above address.

Expansion Ring Extractor

A useful fire service shop tool now available is a new expansion ring extractor for quick and easy removal of hose coupling expansion rings. Priced at only $9.75, it can be ordered from Bell & Phil Company, Arlington 74, Mass.

Pocket-Size FM Radio

Radio Corporation of America, RCA Building, 30 Rockefeller Plaza, New York 20, New York, has developed a pocket-size FM radio receiver for integration with mobile communication systems. It could be of particular use to municipal and industrial fire departments. The transistorized 10-ounce instrument is designed to provide extensions of several miles for radio systems now operating on the 150-megacycle band. According to the manufacturer, the receiver will become available commercially later this year. It will operate on any frequency in the 148-to-174 megacycle band, assigned by the Federal Communications Commission for communications of Federal, municipal, industrial and utility services. For further information write to the manufacturer at the above address.

Sparky Winners

Clifford B. Hannay & Son, Inc., Westerlo, New York, recently conducted a special contest for fire chiefs. The company mailed entry blanks to all fire chiefs in the United States. Contest entrants simply had to submit a statement concerning practical use of booster hose reels.

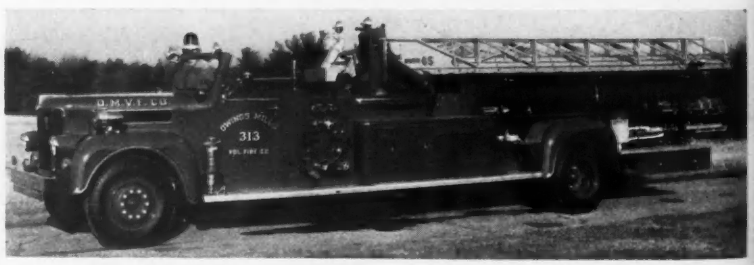
Chiefs who filed the statements were awarded Sparky dolls. The following is a list of the winners. (Note that the first is a woman!)

Chief Anne C. Allen Holst, East Greenwich, Rhode Island; Chief C. W. Wyrick, Greensboro, North Carolina; Chief Edward F. Steek, Skokie, Illinois; Chief Russell M. Hunt, Haddonfield, New Jersey; Chief Huffman, Hutchinson, Kansas; Chief Harry T. Sears, So. Braintree, Massachusetts; Chief E. S. Owens, Nelson, B. C., Canada; Chief David Williams, Vinita, Oklahoma; Chief Chares Roth, Jr., The Dalles, Oregon.

Chief Donald S. Charles, Charlotte, North Carolina; Chief Joseph R. Lussier, Somerset, Massachusetts; Chief T. C. Dickson, Lincoln Park, Michigan; Chief Otto F. Karg, Idaho Falls, Idaho; Chief Brook Beatty, Kansas City, Kansas; Chief Russell M. Wilson, Monroe City, Missouri; Chief Paul A. Davidson, Illmo, Missouri; Chief Edward J. Spolnik, Hammond, Indiana.

Chief Ralph A. Lee, Costa Mesa, California; Chief A. F. Putschler, Dickinson, North Dakota; Chief Fred W. Walker, McCook, Nebraska; Chief Chas. L. Burkett, Salisbury, North Carolina; Chief John A. Zick, Neenah, Wisconsin; Chief Vernon B. Rucker, Killeen, Texas; Chief John F. Loughery, Baca Raton, Florida; and Chief John B. Gibson, Sr., South Norfolk, Virginia.

Volunteers Get New "Quint"



The Owing Mills Volunteer Fire Company, Inc., Owing Mills, Maryland, recently accepted this new custom built "quint" by the Maxim Fire Apparatus Company of Middleboro, Massachusetts. It has a power-operated 65-ft. steel aerial ladder, a 750 gpm Class A pump, a 300-gallon booster tank, a booster hose reel, carries 190 ft. of ground ladders, 1500 ft. of 2½-in. hose and 300 ft. of 1½-in. hose. It is equipped with two-way radio, two 500 watt floodlights, carries gas masks, rescue and salvage tools and other equipment.